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PC 128102

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

WASHINGTON, D.C. 20460

OFFICE OF
PESTICIDES AND TOXIC SUBSTANCES

MEMORANDUM JUL 27 1983

DATE:

SUBJECT: PP9G2154 and 9H5201 concerning pirimiphos-methyl on farmer stock peanuts and related tolerances.

TOX Chem. No. 334B

TO: Jay Ellenberger, PM#12
Registration Division, TS-767

THRU: William L. Burnam, Branch Chief, WLB 7.21.83
Toxicology Branch
Hazard Evaluation Division (TS-769)

Background:

The ICI Americas Inc. is requesting to establish tolerances for their organophosphate insecticide pirimiphos-methyl as follows:

Proposed Temporary Tolerances (PP#9G2154)

It is proposed that temporary tolerances be established for combined residues of the insecticide pirimiphos-methyl, 0-(2-diethylamino-6-methyl-pyrimidin-4-yl) O,O-dimethyl-phosphorothioate, the metabolite 0-(2-ethylamino-6-methyl-pyrimidin-4-yl) 0,0-dimethylphosphorothioate and, in free and conjugated form, the metabolites

2-diethylamino-6-methyl-pyrimidin-4-ol
2-ethylamino-6-methyl-pyrimidin-4-ol and
2-amino-6-methyl-pyrimidin-4-ol

in or on the following raw agricultural commodities:

Peanuts	25	ppm
Peanut hulls	125	ppm
Milk, eggs, poultry, meat, fat and meat byproduct of cattle, goats, hogs, horses, and sheep (except liver and kidney)	0.1	ppm
Liver and kidney	0.5	ppm

Proposed Food Additive Tolerances (FAP 9H5217)

(Same chemicals as above)

Peanut oil	50	ppm

This proposed tolerance was reviewed previously by Toxicology Branch (TB) and TB did not recommend in favor of establishing this tolerance because the tolerance level of 25 ppm in peanuts is in excess of 20 ppm. See TB review by J. Doherty, dated 7/12/83, for explanation. This problem has now been resolved (see below) and TB no longer has any objections to the establishment of these temporary tolerances or to the proposed EUP program (#10182-EUP-RL) for the use of Actellic® 7E Insecticide on peanuts

Same inerts in Actellic® 7E Insecticide are not cleared for use on RACs. See TB review dated 7/12/83. These inerts must be cleared prior to initiation of this EUP program.

8 POINT REVIEW

[Prepared June 1983, for PP#9G2154 and FAP9H5201 concerning pirimiphos-methyl in/on ~~in~~ farmer stock peanuts and related tolerances]

1. Toxicological data considered in setting these tolerances included:

Subacute and Chronic studies:

90-Day rat feeding	NOEL = 8 ppm (ChE and systemic)
90-Day dog feeding	NOEL <2 mg/kg/day (ChE) (LDT) NOEL = 2 mg/kg/day (systemic)
Mouse oncogenesis (oral)	Negative for oncogenic effects, NOEL between 5 and 250 ppm for ChE inhibition
2-Year dog chronic feeding	NOEL = 0.5 mg/kg/day (ChE) NOEL = 2.0 mg/kg/day (systemic)
2-Year rat chronic feeding, oncogenesis	NOEL = 10 ppm (ChE) NOEL = 300 ppm (systemic) Negative for oncogenic effects
Teratology - rabbits	Negative at 16 mg/kg/day (HDT)
3-Generation Reproduction - rats	NOEL = 100 ppm (HDT)
Acute Neurotoxicity - hens	Equivocal Results
90-Day Neurotoxicity - hens	No neurotoxic effect at 10 mg/kg/day for 90 doses. (HDT)

2. Data considered desirable but currently lacking.

None.

3. Not applicable for this petition.

4. See computer printout attached.

5. Granting this tolerance would increase the % of the ADI used up from 71.00% to 75.48% (see computer printout attached). The TMRC will change from 2.1301 mg/day (1.5 kg) to 2.2643 mg/day (1.5 kg), representing a 6.3% increase.

6. The 2-year rat feeding study with a NOEL of 10 ppm for ChE inhibition and a safety factor of 10 were used to determine the ADI, etc. The ADI is 0.05 mg/kg/day and the MPI is 3.00 mg/day/60 kg person.

7. Toxicology Branch has no knowledge of pending regulatory actions against registration of pirimiphos-methyl.

8. Although the proposed tolerance of 25 ppm is in excess of the maximum allowed tolerance, this petition has been recommended favorably because TB has been informed by RCB (R. Hummel, personal communication, July 18, 1983) that the actual ChE inhibiting residues will not be in excess of 10 ppm.

The maximum allowable tolerance level for pirimiphos-methyl on RACs is 20 ppm (see J. Doherty memo for this petition dated July 12, 1983). The tolerance limit of 20 ppm is related to the NOEL of 0.5 mg/kg/day established for pirimiphos-methyl based on inhibition of ChE.

The registrant (see letter from Mr. J. Wagner dated June 30, 1983) provided information that the actual residues of pirimiphos-methyl and its ChE inhibiting metabolites would be less than 10 ppm and requested that the conventional rules applied to tolerances in situations where the proposed tolerance exceeds the NOEL not be applied in this case with pirimiphos-methyl.

Residue Chemistry Branch (RCB) has reviewed the request of the ICI Corporation (dated June 30, 1983) and has concluded that pirimiphos-methyl and its potential ChE inhibiting metabolites will not exceed 10 ppm in peanuts (nutmeat) as per personal communication from Dr. R. Hummel (RCB, July 18, 1983).

Recommendations:

TB has no further objections to establishing the proposed tolerance of 25 ppm on/in peanuts as requested. This recommendation is contingent upon confirmation from RCB that the net residues of pirimiphos-methyl and its ChE inhibiting metabolites will not be in excess of 10 ppm. RCB must also confirm that the proposed tolerances for milk, eggs, poultry, meat, fat, and meat byproducts of cattle, goats, hogs, horses, and sheep will not exceed 0.1 ppm (except for liver and kidney which should not exceed 0.5 ppm).

TB is not concerned that the tolerance for peanut oil is 50 ppm because it believed that humans do not consume large quantities of peanut oil in a short span of time.

See the 8 Point Review attached.

Edwin R Rudd for
John D. Doherty, Ph.D.
Toxicology Branch
Hazard Evaluation Division (TS-769)

Rudd 7/26/83

DCR-11261:JohnDoherty:TOX-29:CM#2:Rm814:557-3713:7/22/83:efs

File last updated 7/19/83

ACCEPTABLE DAILY INTAKE DATA

RAT,Older NOEL mg/kg	NOEL ppm	S.F.	ADI mg/kg/day	MPI mg/day(60kg)
0.500	10.00	10	0.0500	3.0000

Published Tolerances

CROP	Tolerance	Food Factor	mg/day(1.5kg)
Kiwi Fruit(204)	5.000	0.03	0.00225

MPI	TMRC	% ADI
3.0000 mg/day(60kg)	0.0023 mg/day(1.5kg)	0.08

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Unpublished,Tox Approved 9G2200

CROP	Tolerance	Food Factor	mg/day(1.5kg)
Corn,all types(38)	10.000	2.51	0.37650
Sorghum(147)	10.000	0.03	0.00450
Wheat(170)	10.000	10.36	1.55442
Rice(137)	15.000	0.55	0.12417
Eggs(54)	0.100	2.77	0.00416
Milk&Dairy Products(93)	0.100	28.62	0.04292
Meat,inc poultry(89)	0.100	13.85	0.02077
Kidney(203)	0.500	0.03	0.00023
Liver(211)	0.500	0.03	0.00023

MPI	TMRC	% ADI
3.0000 mg/day(60kg)	2.1301 mg/day(1.5kg)	71.00

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Current Action 9G2154

CROP	Tolerance	Food Factor	mg/day(1.5kg)
Peanuts(115)	25.000	0.36	0.13413

MPI	TMRC	% ADI
3.0000 mg/day(60kg)	2.2643 mg/day(1.5kg)	75.48

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DRAFT

Rpd 7/26/83